

APPENDIX 4

Water Quality Project Applications

Iowa Application Procedures **Ag Water Quality Protection Projects**

These application procedures are intended to provide uniform guidance for the preparation of project applications to address agricultural nonpoint sources (NPS) of pollution that affect water quality in Iowa. Applications developed under these guidelines can be used for various water quality protection programs such as: IDNR/EPA Section 319, IDALS-DSC Water Protection Fund projects, and the USDA EQIP program. Each program may have additional requirements, but this should serve as a good base.

Applications should address all major nonpoint sources of contamination impacting the water resource to be protected. Proposed project components should reduce the pollutant load to the water resource from identified sources, and should have a likelihood of producer acceptance. As appropriate, proposed projects should demonstrate new or innovative approaches that can be used to address NPS pollution.

There is no minimum length of the application, however, the *maximum* number of pages allowed is 15, not including budget sheets and letters of support. The application should address each component completely and concisely.

Each project application should use the cover page and budget sheets attached to these guidelines. Do not attach separate covers or bindings, as these are only an inconvenience to the reviewers. Staple each copy of the application in the upper left corner only.

The project application should be divided into two major parts:

Part I-Background Information: to identify, describe and quantify the water quality problems, watershed characteristics, the best management practices (BMPs) necessary to reduce the source and effects of NPS pollution.

Part II-Water Quality Protection Plan: to describe project objectives, activities, schedule, evaluation criteria, budget, participating entities and project outputs.

TITLE PAGE AND PROJECT SUMMARY

Each application should use the attached cover page (title page). It provides the following information:

- Project Title
- District(s) submitting the application

- Nonpoint source category impacted (usually agriculture)
- Total funding requested for the life of the project
- A one or two paragraph project summary stating the project's purpose, problem(s), and proposed solutions. The project summary should not exceed the space provided at the bottom of the title page.

PART I – BACKGROUND INFORMATION

Background information for the project application should identify the water resource to be protected, describe the type and extent of the existing water quality problems, provide details of the characteristics of the watershed or project area, and outline the BMPs that will be necessary to correct the problems.

Water Resource and Related Problems:

The project application should identify the specific water resource to be protected by the project. The resource may be a public lake, municipal water supply, stream or river segment, marsh, groundwater aquifer, or other resource of state or local significance. Information provided should include:

- Name
- Location
- Size
- Watershed area
- When constructed
- Managing agency or organization
- Public Uses
- User days

The application should identify the water quality problems being encountered and describe the impact that these problems are having on the use of the water resource. These impacts may be in a variety of forms:

- Loss of surface area or volume
- Algal plant growth
- Drinking water standards violations
- Increased water treatment costs
- Loss of habitat
- Loss of recreational value
- Reduced recreational use

Local observations of resource use decline, or other use statistics are appropriate information for the project application, if they indicate that decline in use of the water resource may be a result of NPS pollution. The Department of Natural

Resources' assessment of designated uses and levels of use impairment for lakes and streams of the state may also be helpful in providing information for this section.

Local observations of decline of the water resource itself also need to be included in the project application.

Pollutants causing the impairment may include:

- Sediment
- Nutrients
- Pesticides
- Animal wastes

The application being developed may be a part of a larger effort to enhance the water resource or its use. Agencies or organizations may have already contributed to the development or improvement of the water resource. If so, provide information detailing this. Other plans may also still be in the development stages, but may be contingent on correction of existing water quality problems. If so, also provide this information.

Watershed Characteristics and Pollution Sources:

The project application should provide relevant information concerning the project size, geographic setting, landowners, land use, and other characteristics that affect the project. This information should be quantified as well as possible.

Land use in the watershed or project area should be detailed as accurately as possible. Provide the following information:

- Cropland
- Pasture
- Timber
- Publicly owned areas
- Number of farmsteads or landowners
- CRP acres
- Urban
- Other uses

Additional information relevant to the implementation of the Food Security Act (FSA) may be relevant, such as:

- Highly erodible land acres
- FSA plan coverage
- Status of FSA plan implementation

- Wetland determination status

The application should provide general information on:

- Soils
- Climatic conditions
- Geologic characteristics
- Typical cropping patterns
- Management practices
- Existing BMPs

Livestock information for the project area should be quantified as completely as possible:

- Type and number of livestock
- Existing livestock facilities
- Permitted animal waste facilities
- Animal waste storage and handling methods
- Animal waste land application methods and rates

Non-agricultural sources:

- Industries that are impacted by poor water quality
- Industrial sources of pollution
- Impacts of urban or residential areas on water quality

A map of the watershed or project area should be included in the project application.

Practices Needed to Protect Water Quality:

This section of the application is intended to describe the types and quantities of practices necessary to eliminate the water quality problem. For example:

- Terraces are needed on 1,200 crop acres
- 10 livestock producers need animal waste control facilities
- 2,000 crop acres will benefit from nutrient management systems

At this point in the project application, quantify the practices necessary to fully address the water quality problems, but do NOT set application goals for the project itself. In order to set application goals for the project itself, you will need

to identify the critical areas or problems that have the most major impact on the water resource.

Critical areas or problems that have a major impact on the water resource should be identified. For example:

- Areas with high sediment delivery to the water resource
- Gullies
- Livestock access to water resources
- Feedlots in proximity to the water resource
- Intensively cropped land in proximity to the water resource
- Abandoned wells
- Sinkholes

PART II – WATER QUALITY PROTECTION PLAN

Project Objectives and Goals:

Project objectives should be set to address all of the water quality problems identified in the background portion of the project application. Make project objectives measurable and realistic.

For each BMP and practice used, determine a reasonable project objective. Objectives like 100% participation or 100% application of practices may not be realistic for the project. Objectives contained in the project application should reflect what can realistically be accomplished within the time frame of the proposed project. Examples of project objectives are:

- Reduce nitrogen application rates on corn acres by 25%
- Control livestock access on 50% of the stream corridor
- Install terraces on 750 acres of highly erodible land within ½ mile of the lake

In selecting the BMPs and other practices to be used in the project, keep in mind that not all areas of a watershed contribute equally to the water quality problems. The project should focus on the watershed areas and practices which will have the biggest impact in addressing water quality problems.

Project Description:

The project and its likelihood for success should be determined on the basis of landowner contact related to proposed project activities, surveys, local experience, and/or the experience of similar projects. The project description should include information on:

- Which BMPs or practices will be offered
- Quantity of each BMP or practice necessary
- Total cost to implement each BMP or establish each practice
- Likelihood of landowner acceptance
- Cost-share rates to achieve desired adoption rates. Recognize that not all BMPs require a cost-share or financial incentive to implement.

Information and education activities to promote the project and encourage public interest should be identified. These activities may include:

- | | |
|--------------------------------|--------------------|
| • News releases | News letters |
| • Field days | Demonstrations |
| • Project landowner committees | Outdoor classrooms |
| • Public presentations | Photography |
| • Videos | Radio spots |
| • Public reports | |

Link to the Iowa Nonpoint Source Management Program:

The Iowa Nonpoint Source Management Program (NPSMP) is an IDNR document, dated September 1992, that outlines Iowa's nonpoint source pollution control program and provides information on what is currently being done, and what Iowa intends to do in the future to address its' nonpoint source problems. The project application must:

- clearly identify how the project relates to one or more of the priority activities listed in the NPSMP and/or how it relates to the list of priority waters (see Chapter 3, Work Element #3 of the NPSMP).
- reference the page number, objective, and milestone in the NPSMP.

For assistance in developing this part of the project application, contact the IDNR Water Resources Section-Nonpoint Source Program staff.

Schedule:

Develop a realistic schedule for project implementation showing planned activities for each project year, who will perform the activities, and projected completion dates. Examples of types of activities that might be listed in a schedule include:

- Hire staff
- Develop an annual workplan
- Conduct organizational meetings
- Prepare conservation plans

- Conduct integrated crop management or other farm management meetings
- Conduct work activities (separate out by each activity)
- Install BMPs
- Prepare and submit monthly, quarterly and annual project reports

Measures of Success:

Examples of ways to measure success of the project would be:

- Implementation of demonstrated or recommended BMPs
- Number of farmer contacts
- Changes in attitudes or knowledge levels of project participants – can be determined by conducting pre-project and post-project surveys
- Reduced sediment load
- Reduced soil losses
- Reduced use of nutrients and/or pesticides
- Photographic evidence
- Education and public information activities
- Number of individuals participating.

Water quality monitoring may also be used to measure the success of a project if it is a comprehensive enough monitoring plan to show water quality improvements or trends. Water quality monitoring used to measure success normally requires the existence of pre-project baseline water quality data.

However, there are several drawbacks to using water quality monitoring data to measure a projects' success. Drawbacks include:

- Expense
- Personnel time needed to collect samples
- Extensive staff training required to properly collect and analyze samples

Alternatives to using water quality monitoring to measure success may be to use habitat evaluation or biomonitoring, if the appropriate expertise is available to the project.

Evaluation and Feedback Mechanisms:

It is important to evaluate the project regularly to determine if it is accomplishing its' objectives. Identify the methods by which the progress and achievements of the project will be reviewed, and needed changes will be made.

One method of review is to compare the status of the “measures of success” to the original project objectives. Periodic public meetings can also be successful in evaluating public interest and public perceptions of the success of the project. Quarterly and annual project reports can also be used to evaluate the project.

Participating Agencies and Organizations:

List and discuss the role of each agency, government, college or private organization that is participating in the implementation of the project. Participation can be in the form of financial contribution, technical assistance, sponsorship, volunteer labor, supply donations, or other types of support. Also describe other activities that are also occurring in the project area that contribute or are related to the project.

Letters of support, which include committed resources, from cooperating agencies or organizations are effective ways of showing their support for the proposed project. Letters of support should always show what the contribution to the project will be from that agency or organization. Attach letters of support at the end of the project application.

Project Outputs:

Identify the products that will result from the project activities. These products may include:

- Workplans describing proposed project activities for each year
- Monthly, Quarterly, Annual and Final project reports
- Achievement of project goals and objectives
- Materials developed from public information and education activities
- Impacts on water quality (good or bad)
- How the project changed participants’ attitudes, knowledge levels, and/or actions (good or bad)
- Future activities that will be conducted after project completion

Project Costs and Funding Sources:

Estimate personnel costs for salary and fringe benefits. Identify the percent “full time equivalent (FTE)” and title for each staff position.

List costs for each individual activity (including BMPs) to be conducted during the project. For BMPs, list the cost of each BMP and the percent cost-share that will be offered for each BMP. Estimate the quantities (and costs) of each BMP or other practices that will be implemented during the course of the project.

List travel, training, supplies and other costs relevant to the project.

Also estimate contributions from other agencies or organizations that are expected to contribute to implementation of the project. Where possible, note the agency or organization that will be providing the contribution.

Provide a separate budget for each year of the proposed project, with all costs itemized on the attached project budget sheets. Also complete project budget sheets showing the total itemized costs for the life of the project.

Iowa Application Procedures

For Section 319 Projects Other Than Ag Water Quality Protection Projects

These application procedures are intended to provide uniform guidance for the preparation of applications for Section 319 funding of projects (other than ag watershed projects) to address nonpoint sources (NPS) of pollution that affect water quality in Iowa. [If the project you are proposing is designed to protect a specific water body by implementation of best management practices (BMPs), please use the application guidance from IDNR entitled “Iowa – Application Procedures – Ag Water Quality Protection Projects”, which contains additional instructions pertinent to watershed-based BMP implementation projects.]

There is no required length of the application, however, the *maximum* number of pages allowed is 15, not including budget sheets and letters of support. The application should address each component completely and concisely.

Each project application should use the cover page and budget sheets attached to these guidelines. Do not attach separate covers or bindings, as these are only an inconvenience to the reviewers. Staple each copy of the application in the upper left corner only.

TITLE PAGE AND PROJECT SUMMARY

Each application should use the attached cover page (title page). The project summary should not exceed the space provided at the bottom of the title page.

PART I – BACKGROUND INFORMATION

Background information for the project application should identify the NPS problem to be addressed, how the problem affects water quality, and proposed solutions.

Nonpoint Source Problems:

Identify and provide detailed information about the nonpoint problems your project will address. What, if anything, has already been done to address these problems?

Project Area Characteristics:

Identify and provide detailed information about the project area you are proposing to address, how it relates to the NPS problems and whether it is:

City

County

Proposed Solutions/Need for the Project:

Describe various solutions or activities that could be used to address the nonpoint source problems you discussed in the above section. Will the project address the stated problems through information and education, demonstrations, best management practice implementation or a combination of these?

Justify the need for your project. What audiences will benefit from the results of your project?

PART II – PROJECT PLAN

Project Objectives and Goals:

Project objectives and goals should be set to address all of the nonpoint source problems identified in the background portion of the project application. Make project goals measurable and realistic.

Project Description:

Provide detailed information describing your proposed project activities and what problems those activities will address.

For example, if your project is to conduct statewide training workshops for landowners on a specific practice, the Project Description should include the following information:

- Identification of need for project
- Targeted audiences
- Organizational approach to reaching stated goals
- Details of workshops, (i.e., number of workshops planned, frequency, locations, expected attendance, duration, activities to be conducted, references or handouts provided to participants, etc.)
- Information and education activities, both pre-and post project
- Long term expectations and impacts of workshops

Link to the Iowa Nonpoint Source Management Program:

The Iowa Nonpoint Source Management Program (NPSMP) is an IDNR document, dated September 1992, that outlines Iowa's nonpoint source pollution control program and provides information on what is currently being done, and what Iowa intends to do in the future to address its' nonpoint source problems.

Work Element #3: Establish Additional Nonpoint Control Projects, identifies the following criteria individual projects should be designed to accomplish:

- Control nonpoint pollution of priority streams, lakes, and wetlands
- Reduce movement of nonpoint pollutants to groundwaters
- Evaluate effectiveness of individual BMPs or BMP combinations
- Assess feasibility and effectiveness of alternative approaches to accomplishing nonpoint control (such as using alternative financial incentives, expanding educational or regulatory programs, obtaining land easements, etc.)
- Establish demonstration projects throughout the state to inform and educate landowners and the general public on the use of various BMPs and to demonstrate their effectiveness in improving water quality.

The project application must clearly identify how the project relates to one or more of the priority activities listed above.

Schedule:

Develop a realistic schedule for project implementation showing planned activities for each project year, who will perform the activities, and projected completion dates. Examples of types of activities that might be listed in a schedule include:

- Hire staff
- Develop an annual workplan
- Conduct organizational meetings
- Conduct work activities (separate out by each activity)
- Prepare and submit quarterly and annual project reports

Measures of Success:

Examples of ways to measure success of the project would be:

- Implementation of demonstrated or recommended BMPs.
- Changes in attitudes or knowledge levels of project participants – can be determined by conducting pre-project and post-project surveys.
- Education and public information activities.
- Number of individuals participating.

Evaluation and Feedback Mechanisms:

It is important to evaluate the project regularly to determine if it is accomplishing its' objectives. Identify the methods by which the progress and achievements of the project will be reviewed, and needed changes will be made.

One method of review is to compare the status of the “measures of success” to the original project objectives. Periodic public meetings can also be successful in evaluating public interest and public perceptions of the success of the project. Quarterly and annual project reports can also be used to evaluate the project.

Participating Agencies and Organizations:

List and discuss the role of each agency, government, college or private organization that is participating in the implementation of the project. Participation can be in the form of financial contribution, technical assistance, sponsorship, volunteer labor, supply donations, or other types of support. Also describe other activities that are also occurring in the project area that contribute or are related to the project.

Letters of support, which include committed resources, from cooperating agencies or organizations are effective ways of showing their support for the proposed project. Letters of support should always show what the contribution to the project will be from that agency or organization. Attach letters of support at the end of the project application.

Project Outputs:

Identify the products that will result from the project activities. These products may include:

- Workplans describing proposed project activities for each year
- Quarterly, annual and final project reports
- Achievement of project goals and objectives
- Materials developed from public information and education activities
- Impacts on water quality (good or bad)
- How the project changed participants’ attitudes and/or actions (good or bad)
- Future activities that will be conducted after project completion

Project Costs and Funding Sources:

Estimate personnel costs for salary and fringe benefits. Identify the percent “full time equivalent (FTE)” and title for each staff position.

List costs for each individual activity to be conducted during the project.

List travel, training, supplies and other costs relevant to the project.

Also estimate contributions from other agencies or organizations that are expected to contribute to implementation of the project. Where possible, note the agency or organization that will be providing the contribution.

Provide a separate budget for each year of the proposed project, with all costs itemized on the attached project budget sheets. Also complete project budget sheets showing the total itemized costs for the life of the project

Section 319 & WPF Project Application Evaluation Criteria

Section 319 project applications will be ranked from 0 to 10, with 10 indicating the project application fulfills all of the criteria listed below.

1. **NEED FOR THE PROJECT (0-10 points)**
 - Does the project application adequately describe and quantify the NPS problem or the water quality need to be addressed by the project?
 - Is the need sufficient to warrant a project?
 - If it is a watershed project, does the project meet the criteria of Iowa's Unified Watershed Assessment (UWA) and/or is it on the 303(d) list of impaired waterbodies?
2. **SUITABILITY OF PROJECT MEASURES (0-10 points)**
 - Do the proposed project measures address all of the identified NPS or water quality problems?
 - Are the proposed activities appropriate to address the problem(s)?
 - Has the project targeted critical areas or problems?
 - If applicable, does the project application list specific types and quantities of practices that will be used (i.e., terraces on 800 acres, no-till conservation tillage on 655 acres, etc.)?
3. **BUDGET (0-10 points)**
 - Is the budget comprehensive, providing information on all anticipated costs, including:
 - * a list of BMPs offered and the cost share available for each BMP or other practice to be implemented, if applicable;
 - * equipment, supplies, travel, salaries and fringe benefits;
 - * Costs for information/education products or activities?
 - Are all sources of funding identified, including sources other than Section 319 or WPF?
 - Is the budget cost-effective and reasonable considering the work activities being conducted?
4. **COMPREHENSIVE WORKPLAN (0-10 points)** - Does the project workplan do the following:
 - adequately describe the problem and identify all pollutants and pollutant sources (for watershed projects);
 - adequately describe the activities that will be conducted to address the identified NPS or water quality problem(s);
 - include a reasonable time schedule and budget; and
 - are "measures of success" built into the workplan to help quantify results?

5. **POTENTIAL FOR SUCCESS (0-10 points)** - Considering the following, does the project have a good chance of being successful:
- Is it of manageable size?
 - Are the proposed activities likely to result in water quality benefits, whether water quality benefits are direct (i.e., through installation of BMPs) or indirect (i.e., through increased knowledge of NPS pollution and changes in attitudes)?
 - Is the workplan's time schedule realistic?
 - Where appropriate, is there some potential for continuation of activities after the end of the formal project?
 - Is there an indication of willingness by landowners and/or others to participate in the project?
6. **OTHER PARTICIPATION (0-10 points)** - Does the application demonstrate the following:
- cooperation between state, federal and local agencies;
 - strong local participation by agencies and organizations (i.e., are local agencies and organizations willing to invest time and/or money for project activities)?
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SUMMARY

MAQUOKETA RIVER WATERSHED IMPROVEMENT PROJECT – WRAS

Public Outreach Method(s)

Public outreach in the Maquoketa River Project will include visible demonstration sites, public meetings/tours, farm visits, project summary on the SWCD web page, news releases in local newspapers and radio stations, informational/educational material, and public information depicting the project's accomplishments. For further details please refer to page 15 of the Manure/Nutrient Management Programming for the Maquoketa Watershed PIP, page 7 of the Upper Maquoketa Water Quality Project PIP, page 8 of the Maquoketa River Alliance Information/Demonstration Project PIP, and pages 6 – 7 of the Maquoketa Watershed NPS Communications Assistance PIP.

Monitoring and Evaluation

Water monitoring is currently underway on the Upper Maquoketa by Iowa State University Dept. of Agriculture and Biosystems Engineering. Monitoring research and well testing is funded by the Iowa Legislature to quantify the risks and pollution potential associated with different livestock and manure management systems. Other monitoring is being conducted by the IDNR and the U.S. Geological Survey. The Texas Institute for Applied Environmental Research and Iowa State University is monitoring water quality in the Upper Maquoketa River Watershed, a sub-watershed of the Maquoketa River. For additional information refer to pages 7 – 8 of the Maquoketa River Alliance Information/Demonstration Project PIP, page 3 of the Maquoketa Watershed NPS Communication Assistance PIP, page 3 of the Manure/Nutrient Management Educational Programming for the Maquoketa Watershed PIP, and pages 3 - 4 of the Upper Maquoketa Water Quality Project PIP.

Specific Water Quality Problems

The Upper Maquoketa River is a “put-and-take” trout fishery. High sediment loads limit the available food supply and warms the water enough to threaten the survival of coldwater species. In addition, excess manure and pesticide runoff have had significant impacts on the available food sources on which the trout need to survive. Pesticides also contribute to the degradation of water quality in the Maquoketa stream. Nitrogen, turbidity, and phosphorus values are a concern in this watershed. The Maquoketa, according to USGS monitoring data, delivers sediment load to the Mississippi that is significantly greater than other nearby tributaries of the Upper Mississippi Basin. For further details on Specific Water Quality Problems refer to pages 1 – 5 of the Upper Maquoketa River Water Quality Project PIP, pages 3-5 of the Maquoketa River Alliance Information/Demonstration Project PIP, page 3 of the Manure/Nutrient Management Educational Programming for the Maquoketa Watershed PIP, and pages 1 – 2 of the Maquoketa Watershed Nonpoint Source Communications Assistance PIP.

Watershed Coordinator/Evaluator:

A full-time project coordinator will be employed to implement project activities. For further details please refer to the section under Project Description on page 8 of the Maquoketa River Alliance Information/Demonstration Project PIP. A full-time Extension Manure/Nutrient Management Specialist will be assigned to the project. For further details please refer to page 8 of the Manure/Nutrient Management Educational Programming for the Maquoketa Watershed PIP.

Actions to be Taken and Desired Water Quality Goals and Outcomes:

The information/demonstration aspect of the project will include information/education efforts to reduce sediment and nutrient delivery in the Maquoketa River Basin. In addition a newsletter will be published, one water quality conference and 4 tours will be held in the watershed. Packaged water quality information will be distributed and presentations will be given to 15 groups, organizations or communities each year to generate interest and support. An additional task is to make crop nutrient and management educational programming available to producers and consulting agronomists. The installation of a long-term riparian corridor demonstration is planned along with the reduction of sediment, manure, nutrient and pesticide run-off. For additional information please refer to Project Objectives on page 8 of the Maquoketa River Alliance Information/Demonstration Project PIP, pages 7 – 8 of the Upper Maquoketa Water Quality Project PIP, pages 7 – 10, 12 – 13 of the Manure/Nutrient Management Educational Programming for the Maquoketa Watershed PIP, and pages 8 – 10 of the Maquoketa Watershed NPS Communications Assistance PIP.

Schedule for Implementation:

This project is scheduled to be carried out in four years. At this time, IDNR is requesting Section 319 funding the first three years of the project.

Funding Needs:

Funding needs are detailed in the Budget section of the Maquoketa Watershed NPS Communications Assistance, Maquoketa River Alliance Information/Demonstration Project, Manure/Nutrient Management Educational Programming for the Maquoketa Watershed, and Upper Maquoketa Water Quality Project Implementation Plans. IDNR is requesting \$ 666,347 in funding from section 319 to carry out the first two years of these projects. The balance of the funding for years 1–2 will likely be provided by the state Water Protection Funds or Watershed Protection Program.